DEC STD 106-0 Quality Requirements for Customer Service Parts

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ABSTRACT: This document defines the requirements that service parts must meet in order to complement the corporate effort to achieve, maintain, and improve customer satisfaction. It specifies hardware quality requirements, both to unique Customer Service and common to all parts shipped in options and systems. While this document emphasizes particular requirements, it does not supersede or in any way negate the applicability of any other Digital standard.

APPLICABILITY: This standard is mandatory for personnel involved in the design, manufacture, procurement, repair, refurbishment, stocking, or distribution of service parts to support equipment and/or products sold as Digital products. This standard applies to both new build and repaired service parts, whether sourced internally or externally.

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1 INTRODUCTION

The material planned, sourced, repaired, distributed, sold, and consumed by customer service organizations in support of Digital's customer base must be compliant with all functional requirements and all applicable safety and regulatory requirements. Field Replaceable Units (FRUs) and end-item products, in particular, must be properly identified and packaged so that the right part is delivered in the right condition to the Digital, OEM, or self-maintenance customer.

While this requirement is no different from that imposed on revenue-ship end-user items, service parts must meet unique requirements. Material consumed in new-build production activities is typically stored for a brief time before being integrated into a finished higher assembly. Service parts, however, may be stored for indefinite periods of time in one location or shipped to multiple points before final use. Shelf life and environmental storage requirements are therefore unique considerations for service parts.

Moreover, service parts serve the support function of restoring or preserving a previously functional, operable unit or system to or at full capability. Service parts, especially FRUs, must therefore meet or exceed the quality and reliability of the parts they replace. Compliance of service parts to these *Fitness for Use* standards is necessary to uphold system availability, which preserves and enhances customer satisfaction and service profit goals.

As Digital continuously seeks to improve service delivery, strategies for sourcing and distribution of service parts are evolving toward decentralization and local sourcing, thus emphasizing the need for one worldwide quality standard for service parts. Uniformity is necessary to ensure customer satisfaction.

1.1 PURPOSE

This document establishes a uniform quality standard for service parts, identifying elements or quality features that comprise fitness for use. This standard consolidates applicable requirements already documented in other Digital technical standards and specifications with unique service part requirements. This document, therefore, serves as the worldwide standard to which all suppliers and providers must comply when providing service parts to Digital or its customers.

1.2 SCOPE

This standard specifies the requirements that service parts must meet to comply with Digital customer satisfaction objectives. It applies to all service parts, new and repaired, internally or externally sourced, throughout the product service life as defined by the latest version of *DEC STD 028-0 Phase Review Policy*.

Types of service part material to which this standard applies are:

- Materials needed for repair of FRUs
- FRUs
- End-item products used as FRUs
- Parts used only by Customer Service

1.3 RESPONSIBILITIES

1.3.1 Digital Services Logistics Engineering Manager

The Digital Services Logistics Engineering Manager, through the *DEC STD 106-0* standard owner and *DEC STD 106-0* Advisory Committee, is responsible for maintaining this standard.

1.3.2 International Logistics Operations (ILO)

ILO is responsible for incorporating the requirements of this standard into all service part material strategies and operations, including planning, sourcing, distribution, and repair.

1.3.3 Design Engineering and Support Engineering

Design Engineering is responsible for incorporating the requirements of this standard into new product requirements. Support Engineering is responsible for changes to existing product requirements. Design parameters, features, and supporting documentation (drawings, parts lists, specifications, and ECOs) typically represent product requirements.

1.3.4 Customer Services Systems Engineering (CSSE)

CSSE is responsible for identifying maintainability requirements for products and for assuring that serviceability strategies are consistent with the requirements of this standard.

1.3.5 Geographic Area Customer Services (Field)

Geographic Area Customer Services is responsible for ensuring that the provisions of this standard are uniformly implemented throughout all Customer Services procurement, stocking, distribution, repair, and service delivery operations.

1.3.6 Product Protection Services (PPS)

PPS is responsible for identifying the physical and electrostatic discharge (ESD) protection requirements of service parts.

2 REQUIREMENTS

2.1 GENERAL

All service parts are required to be Fit-For-Use (FFU) at the time of installation at the user's site. Fitness for use incorporates both compliance with technical performance requirements at the point of manufacture or repair and full compliance at the time and place of use. Service parts must meet the requirements of the following FFU criteria.

- Infancy reduction
- Full functionality and reliability
- Correct identification
- Quantity if more than one
- Appropriate packaging and protection
- Correct configuration
- Workmanship compliance with all Digital standards
- Safety and regulatory compliance

Categorizing fitness for use into these seven elements does not supersede compliance with applicable Digital technical standards. Rather, the seven elements are intended to categorically include all applicable Digital standard requirements.

Service parts must meet or exceed the requirements of the parts they are intended to replace and are subject to the same specifications and waivers, unless explicitly stated.

2.2 INFANCY REDUCTION

All service parts must be screened or otherwise controlled to remove defects that contribute to early life failure, often referred to as *infant failures*, which typically result from immature processes. This element prohibits the use of material that has been prematurely withdrawn from the complete sequence of process steps that ensure performance stability. The supplier is responsible for demonstrating compliance with this element to the satisfaction of the Digital sourcing function.

2.3 FULL FUNCTIONALITY AND RELIABILITY

All service parts must perform all of their functions over the range of variables and tolerances specified in the applicable detailed technical specifications. In the absence of such a specification, the part's functionality requirements shall be determined by the design intent as stated in the functional specification for the next higher assembly. The supplier is responsible for ensuring that every service part meets its designed functionality. Demonstration of compliance shall be accomplished by acceptance testing agreed upon by the supplier and Digital. The Digital sourcing function will act as Digital's representative and will be supported technically by other ILO functions as required. For service parts other than piece parts or discrete electronic devices, such testing typically includes a demonstration that the part will perform in its application at the system or network level.

Full-functionality-over-time, or reliability, is another feature of this element. All service parts must meet the performance-over-time requirements specified in the governing detailed technical specification. In the absence of such a specification, the service part reliability requirement shall be established empirically from reliability tests conducted on higher assemblies that incorporate the same part. The supplier is responsible for demonstrating service part compliance with reliability requirements to the satisfaction of the Digital sourcing function.

2.4 CORRECT IDENTIFICATION

In order to ensure the correct part is provided to the customer, each service part must be accurately and legibly marked in accordance with the applicable requirements of *DEC STD 178-0 Digital Identification Marking Requirements Manual (Introduction and Manual)*.

Bar code identification, as specified in *DEC STD 047-0 Bar Code Symbology Criteria* and *DEC STD 047-1 Bar Code: Product and Shipping Carton/Container Labelling* , is required for all service parts. Bar coding shall be applied to both the part, when feasible, and its packaging in accordance with product-specific packaging specifications. In the absence of specific packaging specifications, package marking shall be governed by the latest revision of DEC STD 178, supplemented by the latest revision of A-PG-FSGUIDE-GS-DA00, *Customer Services Logistics Packaging and Labeling for Fit-For-Use Classification*.

2.4.1 Part Marking

Complete and detailed marking requirements are described in the following standards for the indicated types of service parts.

Part	Digital standard
Piece parts	*DEC STD 178-1 Digital Marking Requirements for Piece Parts*
Subassemblies*, FRUs, non-FRUs	*DEC STD 178-2 Digital Marking Requirements for Subassemblies: Field Replaceable Units (FRU) and Non-Field Replaceable Units*
Completed products intended for sale	*DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to be Sold*
Completed products intended for sale	*DEC STD 178-5 Marking Symbology*

* Module marking requirements are detailed in *DEC STD 030-4 Module Manufacturing Standard - Printed-Wiring Board Design Requirements*.

All service parts shall be individually marked. Alternative marking methods for parts too small or otherwise impractical to accommodate individual marking are covered in the latest version of *DEC STD 178-1*.

At a minimum, each part shall be marked with:

- Part number
- Revision
- Supplier site code or manufacturer's symbol (as required)
- Serial number/date code or lot code/date code (as required)
- Regulatory markings (as required)
- Hazard warning (as required)

The following text explains the applicability of marking requirements to service parts.

2.4.1.1 Part Number and Revision

The Digital part identifier, in accordance with *DEC STD 012-0 Part Identification Standard*, shall be used for part number and revision marking. For example:

- Part number and part revision:

  70-12345-01 Rev B02 (for product marking)
  70-12345-01.B02 (for product electronic data interchange)

DEC STD 012-0 defines how to construct the part identifier for older parts that are not controlled by part revision. For example:

- Older part number with controlling document revision convention:

  54-12345-00 Circuit Schematic (CS) Rev C
  70-98765-00 Unit Assembly (UA) Rev B
  74-12345-01 Parts List (K-PL) Rev K

  Become:

  54-12345-00 Rev C00 (for product marking)
  54-12345-00 .C00 (for electronic data interchange)
  70-98765-00 Rev B00 (for product marking)
  70-98765-00 .B00 (for electronic data interchange)
  74-12345-01 Rev K00 (for product marking)
  74-12345-01 .K00 (for electronic data interchange)

All older part numbers using a convention other than Part Rev must be assigned a Part Rev when undergoing a change. Requirements for establishing Part Rev for such parts are described in *DEC STD 012-0*.

If Digital and its supplier agree by contract, service parts (below the FRU level) provided by external suppliers may display the supplier's part number and revision in lieu of the equivalent Digital part number identifier as specified in *DEC STD 178-1*. This condition applies most frequently, but not exclusively, to industry standard piece parts.

Specific requirements that specify marking with the Digital part number and revision supersede the provision that allows only the external supplier part number.

2.4.1.2 Manufacturing Site Code or Manufacturer's Symbol

As specified in *DEC STD 031-2 Product Serialization - Site Codes*, the part shall display a three-character alpha manufacturing site code. This code is normally prefixed to the serial number. For external supplier parts, this requirement shall be met by marking the manufacturer's symbol or site code.

2.4.1.3 Serial Number/Date Code or Lot Code/Date Code

As described in *DEC STD 131-0 Traceability Policy*, material traceability requires identification by site code, serial number, date code, or lot code. Specific requirements are detailed in the *DEC STD 178* series, as listed under subhead 2.4.1 of this document.

The designated Product Engineer or Product Team (as detailed in *DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to be Sold* is responsible for determining the applicability of part traceability. All manufacturing, repair, and distribution facilities are required to implement the necessary procedures and processes to ensure part traceability, when specified by the Product Engineer or Product Team. Repair facilities are mandated to maintain serial number integrity. Alteration of serial numbers or replacement of serial numbers previously assigned by Point of Manufacture (POM) processes is prohibited as detailed in *DEC STD 178-3*.

When the original serial number is illegible or missing from service parts returned from the field, repair facilities shall follow the reserialization provisions described in the latest version of *DEC STD 047-1*. Traceability requirements for some types of service parts, primarily high-volume industry standard piece parts, may be met by marking the manufacturing lot code or date code, as specified in *DEC STD 178-1*.

2.4.1.4 Regulatory Marking

If specified in the engineering documentation for the specific service part, regulatory marking such as UL, CSA, VDE, and FCC must appear on each part in accordance with *DEC STD 178-1*, *DEC STD 178-2* and *DEC STD 178-3*. Repair facilities are not permitted to replace or duplicate agency or regulatory test house marks without approval, in accordance with *DEC STD 178-3*. Effectivity for application of regulatory or agency marking to service parts manufactured prior to agency authorization shall be governed by the authorized documentation and respective agency regulations.

For external supplier service parts purchased for which no Digital documentation exists, engineering documentation is defined to be the supplier's documentation.

2.4.1.5 Hazard Marking

If specified in the engineering documentation for the specific service part, hazard warning labels must be applied to each service part as specified in *DEC STD 178-1, DEC STD 178-2, DEC STD 178-3 and DEC STD 178-5*. Typical examples of this requirement are electrostatic discharge (ESD), electromagnetic interference (EMI), and radio frequency interference (RFI) sensitivity, dangerous voltages, and hazardous material.

For external supplier service parts purchased for which no Digital documentation exists, engineering documentation is defined to be the supplier's documentation.

2.4.1.6 Other Part Marking

As required by the governing engineering documentation and/or specification, additional marking information may be required. Expiration date, for example, is a marking requirement for material that has a specific shelf life.

2.4.1.7 Repair Tracking

Field returns that have completed all operations and are ready for redistribution shall also display a tracking identification in accordance with the provisions of *DEC STD 047-1*. The tracking identification shall appear on the part but not on the outside packaging. Electronic tracking—electronically erasable programmable read only memory (EEPROM) and compact disk read only memory (CD ROM), and access to data warehouse files—in lieu of marking is acceptable as long as all *DEC STD 047-1* requirements for repair tracking have been met.

2.4.2 Package Marking

Exterior shipping containers enclosing the service part shall display the same information listed on the part, except for repair tracking information. Detailed marking requirements for shipping containers are provided in *DEC STD 178-4 Shipping Container Marking Requirements for Finished Goods*. Specific package marking requirements and prohibitions for service parts sold directly to customers are listed in *DEC STD 178-8 General Shipping Documentation and Container Labeling Requirements for Finished Goods Intended to be Shipped to Customers*.

2.5 APPROPRIATE PACKAGING AND PROTECTION

Fitness for use of all service parts requires protection from the environment as specified in the governing detailed functional specifications. In the absence of such specifications, the storage requirements shall be those determined by the functional specification for the next higher assembly requirements of or by *DEC STD 102-0 Enviromental Standard for Computers and Peripherals - General Test Requirements*.

All service parts shall be packaged individually, unless otherwise specified, and shipped in accordance with *DEC STD 043-0 Packaging Requirements for Digital Products, Parts, Assemblies, and Materials*, *DEC STD 045-0 Packaging Products for International Shipment - Introduction*, *DEC STD 102-0*. Supplemental packaging requirements for Customer Services can be found in A-PG-FSGUIDE-GS-DA00. Parts whose size or cost does not permit economical individual packaging shall be packaged in unit packs consistent with sound cost management and customer satisfaction objectives. Marking shall comply with *DEC STDs 047-0, 047-1, 178-4,* and *178-8*.

ESD protection shall be provided in accordance with *DEC STD 067-2 Packaging of Electrostatic Discharge-Sensitive Devices Procedures and Protective Packaging Materials*. Protection for service parts requiring long-term storage shall be in accordance with *EL-EN517-00 Long-Term Storage of Electronic Components and Assemblies*.

A service part's fitness for use is further defined by inclusion of the packaging components on the applicable Bill of Material (BOM). Additional items, such as extraction tools, insertion tools, manuals, inserts, and desiccants specified on these BOMs, must be included in order for the service part to be FFU.

The PPS is responsible for ensuring that packaging, labeling, and other protective requirements have been appropriately specified for each service part.

2.6 CORRECT CONFIGURATION

2.6.1 Revision Marking

Correct configuration of a service part is a product feature that ensures the part is functionally and physically compatible with its identified applications. Each service part must be identified with a part revision reflecting its mechanical/physical configuration as well as its electronic configuration, as specified in *DEC STD 012-0*. For older parts that have not been assigned part revisions, the configuration must be represented by the revision of the applicable engineering documentation. In such cases, the part and its packaging must clearly indicate the revision marking convention used to represent its configuration. For example:

Etch and Circuit Schematic (CS) revision
Drawing Directory (DD) revision
Computerized Parts List (KPL) revision

2.6.2 Revision Policy

With the exception of unique customer application revision requirements, all service parts shall be planned, sourced, and repaired at the latest (most current) revision in order to incorporate all product improvements. When it is impractical to upgrade a service part to the latest revision, it is permissible to upgrade, repair, or stock to/at the minimum shippable revision provided that customer satisfaction requirements are not compromised.

When customer application requirements demand specific configurations other than the minimum shippable or latest revision, the sourcing function, supported technically by other ILO functions as required, will make arrangements to meet the particular configuration requirement, subject to technical constraints.

2.6.3 Source of Minimum Shippable/Latest Revision

The minimum shippable revision is determined from the part's revision history, including the most recently issued ECO that affects the part. The latest revision is determined from the most recently issued ECO against the part; no revision is valid unless it is documented in an approved change order. If no valid ECO exists the released part is to be used as the latest revision.

2.6.4 Information Inserts

When the product design incorporates features that permit field-adjustable configuration, information inserts must be provided with each service part. Such inserts shall be developed and maintained by the authorized Digital technical functions that are responsible for each insert's technical content and applicability. All inserts shall be revision-controlled to ensure accuracy and timeliness, in accordance with *DEC STD 012-0* and *DEC STD 100-0 Policy and Requirements for the Product Change Process*. Inserts shall provide information in sufficient detail to enable the ultimate user to correctly configure the part to meet the functional and physical compatibility requirements of its particular application. Once created and released, inserts become a mandatory inclusion with each applicable service part.

2.7 WORKMANSHIP COMPLIANCE WITH ALL DIGITAL STANDARDS

Workmanship is a FFU element that represents the pride of the manufacturing or repair source that added value to the part. It is also a feature that addresses the customer's expectations for product appearance as well as the customer's confidence in the supplier's quality standards. Since the quantification of this feature can vary from customer-to-customer, as well as from supplier-to-supplier, the following standards shall comprise the workmanship element of FFU.

All service parts must comply with the workmanship standards specified in all sections of *DEC STD 092-0 Finish and Color Standard*, all sections of *DEC STD 116-0 Workmanship Standards Manual*, and/or *DEC STD 187-0 Mechanical Fabrication Workmanship Standards*, as applicable for the type of service part. *DEC STD 265-0 Module Rework and Repair Standard Procedures* provides supplementary standards to the *DEC STD 116-0* series for reworked or repaired modules.

2.8 SAFETY AND REGULATORY COMPLIANCE

To be FFU, each service part and its packaging must comply with all safety requirements. Product safety requirements shall be in accordance with the requirements specified in the following sections of *DEC STD 119* and *DEC STD 080*.

- *DEC STD 119-0 Digital Product Safety - Introduction and General Requirements*
- *DEC STD 119-1 Digital Product Safety - Design Criteria*
- *DEC STD 119-5 Process for Design, Evaluation, Testing, and Certification of Hardware Products to Product Safety requirements*
- *DEC STD 080-0 Digital Product Safety Industrial Control Equipment - Introduction and General Requirements*
- *DEC STD 080-1 Digital Product Safety Industrial Control Equipment - Design Criteria*
- *DEC STD 080-2 Digital Product Safety Industrial Control Equipment - Test Methods*

Damaged packaging, defective pallets, and loose banding are examples of safety hazards that may render the service part unfit for customer service use.

Each part must also meet all applicable international laws and regulatory agency requirements. Unless the part or model number uniquely identifies a configuration to be used in a specific geographic area, it must comply with the requirements for use in all areas of Digital's identified strategic markets. Unauthorized application of, or failure to display agency labels such as UL, CSA, VDE, and FCC when required, exposes Digital to legal action and possible loss of certification. This is to be considered rendering such service parts unfit for use.

3 WAIVERS

This document establishes worldwide standards of fitness for use so that service parts of uniform quality are available at any and all stocking locations. Each supplier of service parts is responsible for ensuring that all FFU requirements have been met. The term *supplier* includes manufacturing, repair sources, stocking, and distribution functions, both internal and external. In cases where the supplier cannot comply with one or more of the FFU requirements, but must still satisfy a critical customer need, the following waiver procedure shall apply.

3.1 WAIVER REQUEST FOR PRODUCT SAFETY, REGULATORY, OR LEGAL REQUIREMENTS

Waiver requests for noncompliance of a service part with safety, regulatory, or legal requirements shall be in accordance with the requirements of *DEC STD 066-2 Waivers to Digital Design Standards*. Local Material Review Board (MRB) functions are not authorized to render a decision to use as is or otherwise approve waivers for these types of noncompliance.

3.2 WAIVER REQUEST FOR OTHER THAN SAFETY, REGULATORY, OR LEGAL REQUIREMENTS

If the noncompliant condition is limited to a controllable quantity and is temporary in nature (where a permanent corrective action is imminent), local MRB functions shall assess the impact of the noncompliance on the next-in-line customer. If the customer need outweighs the degradation in fitness for use, the MRB may permit controlled use of the discrepant material. The local MRB does not have authority to release discrepant material of this category if impact on the customer or the material distribution system is unknown. Specific responsibility for control of the released material must be explicitly stated in the MRB decision and communicated to the next-in-line user.

If the noncompliant condition affects an indeterminate quantity of pieces or if there is no permanent corrective action identified, a waiver request in accordance with *DEC STD 066-2* must be processed. The consequences of releasing uncontrolled quantities of unfit material into the material distribution system must be weighed against the support benefits to be gained. Such review requires use of the *DEC STD 066-2* formal waiver process, involving the Digital Product Team for the products affected and the Digital Services Logistics Engineering Manager.

If the undesirable consequences of releasing the material outweigh the customer support benefits to be gained, the supplier shall be required to rework the noncompliant material and bring it into full compliance. If rework is impractical, the material shall be scrapped in accordance with applicable property disposal procedures. Fully compliant service parts that meet customer requirements must then be obtained.

3.3 COMMUNICATION REQUIREMENTS

If the noncompliant condition is discovered after some quantity of the affected service parts have already been shipped from the facility that discovered the condition, the local MRB shall assess the severity of the noncompliance and notify appropriate individuals, as described in *DEC STD 005-0 Operational Alert (OPAL) Procedure* and *DEC STD 005-2 Reporting Products Potentially Non-compliant with Digital Design Standards*. Potential product safety noncompliance requires notification of Customer Services Product Safety, as specified in *DEC STD 132-0 Digital Service Safety and Liability Policies and Procedures*.

Once the severity of the noncompliance is established and a decision has been made regarding recall, purging, or restricted use, an Operational Alert (OPAL) may be required, as specified in the latest version of DEC STD 005-0. If the condition does not warrant the OPAL process, but material recall, purging, or restricted use is necessary, a Product Action Notice must be requested, as specified in Customer Services Logistics Policy and Procedure 12.1, *CSL Product Hold*.

GLOSSARY

correct configuration: A product that is functionally and physically compatible for its identified application.

CSA: Canadian Standards Association

CSL: Customer Services Logistics

CSSE: Customer Services Systems Engineering

customer: Anyone who is the recipient of a service part from a provider/supplier. The term, as used in this document, is not restricted to external, revenue paying individuals, companies, or organizations. It can apply to any person or function receiving hardware from another function.

ECO: Engineering Change Order. An ECO is the approved engineering documentation by which a change is authorized to a part, its supporting documentation, its component parts, or its next higher assembly.

EMI: Electromagnetic Interference

ESD: Electrostatic Discharge

FCC: Federal Communications Commission

FFU: Fit-For-Use

FRU: Field Replaceable Unit. A FRU is a piece of hardware designed to be replaceable in the field and is normally listed on the Recommended Spares List (RSL).

ILO: International Logistics Operation

infancy: A characteristic of a component part or assembly that represents unstable performance due to marginal design, or material, or immature process conditions.

Information insert: Documentation, usually a single sheet, enclosed with a service part providing information about settings, adjustments, or precautions to be taken at the end-user site at the time of application.

latest revision: The released part, or the most recent ECO that is documented in an approved change order.

Manufacturer's Symbol: Examples of manufacturers' symbols include:

R	Trademark is registered with the United States Patent and Trade Office
TM	Trademark is not registered
SM	Service Mark
R-SM	Registered Service Mark

minimum shippable revision: The lowest part revision (or other revision if the part's configuration is defined by revision convention other than part revision) that ensures complete functional, physical, and electronic compatibility with every approved application.

MRB: Material Review Board. MRB is a board established to competently review nonconforming material and render a decision regarding its disposition. It is traditionally chaired by a representative from the local quality function.

MTBF: Mean Time Between Failures

Option: A product which has been, is, or may be available for sale as a Digital product

PPS: Product Protection Services

refurbishment: An activity that includes all of the following actions.

a. Replace identified low MTBF (high wear-out or failure rate items).

b. Replace other component items that are found to be functionally or visually defective, or worn but not yet defective.

c. Repair or restore visual attributes to full compliance with applicable standards.

d. Upgrade the service part to a higher functional revision.

repair: An activity taken to correct a functional or visual defect of a service part that restores the part to full functionality and workmanship equal to a new-build part of equivalent revision.

RFI: Radio Frequency Interference

RSL: Recommended Spares List. A listing of those parts and/or subassemblies of an option that are recommended as spares to meet maintainability requirements of the equipment. Often the RSL provides an indication of frequency of expected replacement (MTBF).

Service part: Any piece of hardware used by service delivery organizations (Digital and third party) or self-maintenance customers to support the installed base of equipment. This hardware includes:

- Material (wire, cable, and discrete components) needed to repair FRUs
- FRUs
- Non-FRU subassemblies
- Options
- Stand-alone finished goods
- Materials used to service products (cleaning kits, tools, diagnostic hardware)

System: A group of related elements which interact as a total entity to perform a specific function

System Configuration: The combination of hardware and software which makes up a usable computer system

upgrade: A process by which a part is reworked/modified to bring it up to a higher (more current) revision. It shall always involve either a part revision change or a part variation change.

UL: Underwriters Laboratories

VDE: Verband-Deutscher Elektrotechniker

APPENDIX A REFERENCED DOCUMENTS

A.1 EL-Class Digital Documents

EL-Class Number	Document Title
EL-00005-00	*DEC STD 005-0 Operational Alert (OPAL) Procedure*
EL-00005-02	*DEC STD 005-2 Reporting Products Potentially Non-Compliant with Digital Design Standards*
EL-00012-00	*DEC STD 012-0 Part Identification Standard*
EL-00028-00	*DEC STD 028-0 Phase Review Policy*
EL-00030-04	*DEC STD 030-4 Module Manufacturing Standard - Printed-Wiring Board Design Requirements*
EL-00031-02	*DEC STD 031-2 Product Serialization - Site Codes*
EL-00043-00	*DEC STD 043-0 Packaging Requirements for Digital Products, Parts, Assemblies, and Materials*
EL-00045-00	*DEC STD 045-0 Packaging Products for International Shipment - Introduction*
EL-00047-00	*DEC STD 047-0 Bar Code Symbology Criteria*
EL-00047-01	*DEC STD 047-1 Bar Code: Product and Shipping Carton/Container Labelling*
EL-00066-02	*DEC STD 066-2 Waivers to Digital Design Standards*
EL-00067-02	*DEC STD 067-2 Packaging of Electrostatic Discharge-Sensitive Devices: Procedures and Protective Packaging Materials*
EL-00080-00	*DEC STD 080-0 Digital Product Safety Industrial Control Equipment - Introduction and General Requirements*
EL-00080-01	*DEC STD 080-1 Digital Product Safety Industrial Control Equipment - Design Criteria*
EL-00080-02	*DEC STD 080-2 Digital Product Safety Industrial Control Equipment - Test Methods*
EL-00092-00	*DEC STD 092-0 Finish and Color Standard - Introduction and General Requirements*
EL-00100-00	*DEC STD 100-0 Policy and Requirements for the Product Change Process*
EL-00101-00	*DEC STD 101-0 Manufacturing Operations Plan for Assembly, Inspection, and Test: Policy and Requirements*
EL-00102-00	*DEC STD 102-0 Environmental Standard for Computers and Peripherals - General Test Requirements*
EL-00116-00	*DEC STD 116-0 Workmanship Standards Manual - Introduction*
EL-00119-00	*DEC STD 119-0 Digital Product Safety - Introduction and General Requirements*
EL-00119-01	*DEC STD 119-1 Digital Product Safety - Design Criteria*
EL-00119-05	*DEC STD 119-5 Process for Design, Evaluation, Testing, and Certification of Hardware Products to Product Safety Requirements*
EL-00131-00	*DEC STD 131-0 Traceability Policy*
EL-00132-00	*DEC STD 132-0 Digital Services Safety and Liability Policies and Procedures*
EL-00178-00	*DEC STD 178-0 Digital Identification Marking Requirements - Introduction*
EL-00178-01	*DEC STD 178-1 Digital Marking Requirements for Piece Parts*
EL-00178-02	*DEC STD 178-2 Digital Marking Requirements for Subassemblies: Field Replaceable Units (FRU) and Non-Field Replaceable Units*

EL-Class Number	Document Title
EL-00178-03	*DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to Be Sold*
EL-00178-04	*DEC STD 178-4 Shipping Container Marking Requirements for Finished Goods*
EL-00178-05	*DEC STD 178-5 Marking Symbology*
EL-00178-08	*DEC STD 178-8 General Shipping Documentation and Container Labeling Requirements for Finished Goods Intended to be Shipped to Customers*
EL-00187-00	*DEC STD 187-0 Mechanical Fabrication Workmanship Standards*
EL-00265-00	*DEC STD 265-0 Module Rework and Repair Standard Procedures*
EL-EN517-00	*Long-Term Storage of Electronic Components and Assemblies*

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